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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/622,421

07/18/2003

Paul B. Merkel

85538PAL

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7590

09/26/2006

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EXAMINER

SCHWARTZ, PAMELA R

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/622,421

**Applicant(s)**

MERKEL ET AL.

**Examiner**

Pamela R. Schwartz

**Art Unit**

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 6-34 is/are pending in the application.
- 4a) Of the above claim(s) 9,10 and 16-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6-8,11,12 and 22-34 is/are rejected.
- 7) ☒ Claim(s) 13-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. Claims 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 9, 10, 16-21 remain withdrawn from consideration.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 is inconsistent with claim 1 as amended.

3. Claims 1, 2, 4, 6-8, 11, 12, 22-29 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. (6,919,109) taken alone for reasons of record or further in view of Tsuchiya et al. (6,495,242) for reasons given below.

Nakano et al. disclose preferred colloidal silica particles with a diameter of 50 nm or less as preferable particles to achieve the goals of the reference (i.e. rapid drying and gloss). This disclosure would suggest particles of a broader range to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art to optimize the desired properties taught by the prior art, i.e. drying time and gloss, through determination of a commercially available colloidal silica..

The examiner has considered applicants' showings with respect to particle size and particle size range and has found them unpersuasive. Because applicants' showings vary both variables at once, the criticality of the end points of ranges for either value cannot be determined. In addition, both of these values are already considered to be art recognized properties that one of ordinary skill in the art would control to optimize

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well recognized properties such as gloss and dry time. Therefore, applicants' results are not unexpected.

To support this assertion of the state of the art, the examiner relies upon Tsuchiya et al. The secondary reference discloses an ink jet recording sheet having a void layer containing fine inorganic particles having a dispersion degree of no more than 2. The reference is particularly concerned with gloss (see the abstract) and also discusses the importance of other properties including rapid ink absorption without running or blotting (col. 1, lines 18-25). The reference discloses colloidal silica as a preferred inorganic particle and a particle diameter of no more than 100 nm (col. 5, lines 4-50). The dispersion degree taught by the reference is the ratio of standard deviation to average particle diameter. Controlling this value to no more than two clearly demonstrates a preference in the prior art for uniform particle sizes. With these teachings concerning particle size and particle size range, it would have been obvious to one of ordinary skill in the art to select particles as taught by the secondary reference for use in the medium of the primary reference in order to optimize the properties disclosed by the secondary reference.

4. Claims 1-8, 11, 12, and 22-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. (6,919,109) in view of Tsuchiya et al. (6,495,242) and further in view of Niu et al. (6,689,433) for reasons of record and for reasons set forth above.

5. Claims 1, 2, 4, 6-8, 11, 12 and 22-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (6,495,242).

The reference discloses an ink jet recording sheet having a void layer containing fine inorganic particles having a dispersion degree of no more than 2. The reference is particularly concerned with gloss (see the abstract) and also discusses the importance of other properties including rapid ink absorption without running or blotting (col. 1, lines 18-25). The reference discloses colloidal silica as a preferred inorganic particle and a particle diameter of no more than 100 nm (col. 5, lines 4-50). The dispersion degree taught by the reference is the ratio of standard deviation to average particle diameter. Controlling this value to no more than two clearly demonstrates a preference in the prior art for uniform particle sizes.

The reference also discloses both porous and non-porous supports (col. 3, lines 13-42). The 60 degree specular gloss is disclosed as preferably 20 to 60 (col. 5, lines 1-3). The binder may be polyvinyl alcohol. (col. 5, lines 51-57). The binder may be cross-linked with a boric acid (col. 8, lines 51-65). The ratio of particles to binder is between 3 and 10 (col. 6, lines 23-31). This should result in percentages of binder that fall within the instantly claimed range. Gloss may be increased through use of latex particles (col. 6, line 66 to col. 7, line 24). Glass transition temperature of the latex within the instantly claimed range would have been inherent or obvious because at a higher glass transition temperature, the particles would be subject to deformation and therefore be unable to perform their intended function in the recording element. There may be a swelling layer between the support and the void layer (col. 8, lines 18-20). The void layer may contain a fluorine series surface active agent to improve lubricating properties (col. 9, lines 13-34). The amount is not set forth, but it would have been

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obvious to one of ordinary skill in the art to determine a quantity to perform this function without having a deleterious effect on other properties of the layer. A plurality of void layers may also be present (col. 9, lines 33-34). The total dry coverage of the layers is not set forth, but the examples provide enough information for one of ordinary skill in the art to determine coating weights that achieve the objects of the reference.

Determination of polyvinyl alcohol from those conventionally used in the art, including determination of degree of hydrolysis and viscosity (relevant to the coating properties of the coating composition for the layer) would have been obvious to one of ordinary skill in this art. Determination of a fluorosurfactant from those known and used in the art would also have been obvious. It is noted that fluorosurfactants such as Lodyne ® are taught for use in an ink jet recording material by Niu et al. (6,689,433).

The reference does not disclose the pH of the surface layer. Controlling the pH of these layers is well known in the art because it impacts the ability to for successful coatings. Therefore, it would have been obvious to one of ordinary skill in the art to control the pH of the coating layers.

6. Claims 1 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (6,495,242) in view of Nakano et al. (6,919,109). Nakano et al. disclose a process of cross-linking and coating the image receiving layer preferably at pH of 8 or higher (see col. 14, line 61 to col. 15, lines 4-21). It would have been obvious to use this disclosed technique to facilitate coating and curing of the layers of Tsuchiya et al. which have the same issue of coating a layer containing a cross-linking agent therein.

7. Applicant's arguments filed July 3, 2006 have been fully considered but they are not persuasive. The arguments rely on the combination of the particle size and the particle size range. These arguments have been discussed above in paragraph 3.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

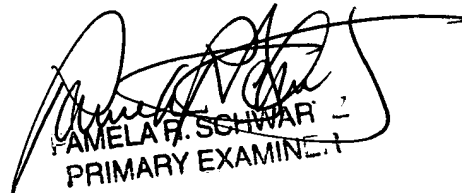
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pamela Schwartz whose telephone number is (571) 272-1528.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PRSchwartz  
September 18, 2006



PAMELA F. SCHWARTZ  
PRIMARY EXAMINER